

CLAIMS

What is claimed is:

- 1 1. A method for selecting a victim to be used during resolution of a deadlock, the
2 method comprising the steps of:
3 initially establishing a plurality of resources involved in said deadlock as a set of
4 candidates to be said victim;
5 performing a first filtering pass that removes candidates from said set based on
6 CAN-BE-VICTIM flags associated with said candidates;
7 if more than a single candidate remains in said set after said first filtering pass,
8 then performing a second filtering pass that removes candidates from said
9 set based on priorities associated with said candidates; and
10 if more than a single candidate remains in said set after said second filtering pass,
11 then performing a third filtering pass that removes candidates from said set
12 based on runtimes associated with possessory entities associated with said
13 candidates; and
14 when said set has been filtered to include a single candidate, selecting said
15 candidate as said victim.
- 1 2. The method of Claim 1 wherein at least a portion of the priority of a given
2 resource is established dynamically.
- 1 3. The method of Claim 2 wherein said portion is established based on which other
2 resources are held by a possessory entity associated with the given resource.

1 4. The method of Claim 1 wherein at least a portion of the priority of a given
2 resource is established statically.

1 5. The method of Claim 4 wherein said portion is established based on the type of
2 the given resource.

1 6. A method for selecting a victim to be used during resolution of a deadlock, the
2 method comprising the steps of:
3 initially establishing a plurality of candidates involved in said deadlock as
4 candidates to be said victim;
5 filtering said plurality of candidates based on one or more factors until a single
6 candidate remains as a candidate to be said victim; and
7 selecting said single candidate as the victim to be used during resolution of said
8 deadlock.

1 7. The method of Claim 6 wherein the step of filtering further includes removing
2 from said plurality of candidates any candidates that have a CAN-BE-VICTIM
3 flag that indicates the candidate cannot be a victim.

1 8. The method of Claim 6 wherein the step of filtering further includes removing
2 from said plurality of candidates the candidates whose resource priority is higher
3 than the resource priority of at least one of the other candidates.

1 9. The method of Claim 6 wherein the step of filtering further includes removing
2 from said plurality of candidates all the candidates that are associated with
3 possessory entities have been running for a duration of time that is relatively
4 longer than the duration of time that possessory entities associated with the other
5 candidates have been running.

1 10. The method of Claim 6 wherein the step of filtering further includes the computer
2 implemented steps of:
3 removing some candidates from the plurality of candidates in a first pass based on
4 a first factor wherein the candidates left is a first subset of candidates; and
5 removing some candidates from the first subset of candidates in a second pass
6 based on a second factor that is different from the first factor.

1 11. The method of Claim 10 wherein the candidates left after said second pass is a
2 second subset of candidates and wherein the second pass based on the second
3 factor is only performed if after performing the first pass more than one candidate
4 is in the first subset of candidates.

1 12. The method of Claim 11 further comprising the computer-implemented step of
2 performing a third pass based on a third factor only if after performing the first
3 and the second pass more than one candidate is in the second subset of candidates
4 wherein the third factor is different from the first factor and the second factor.

- 1 13. The method of Claim 6 wherein the step for filtering further comprises the
2 computer-implemented steps of:
3 performing a first pass to filter out any candidates that have a CAN-BE-VICTIM
4 flag indicating that one is not candidate for termination;
5 if more than one candidate is left after performing the first pass, then performing a
6 second pass to filter any candidates whose resource priority is higher than
7 the resource priority of at least one of the other candidates;
8 if more than one candidate is left after performing the second pass, then
9 performing a third pass to filter out all the candidates except the candidate
10 that has been running for the shortest duration of time.
- 1 14. The method of Claim 6 wherein the step of filtering includes filtering based on
2 priorities established for said candidates.
- 1 15. The method of Claim 14 wherein at least a portion of the priority of a given
2 candidate is established dynamically.
- 1 16. The method of Claim 15 wherein said portion is established based on which
2 resources other than said candidate are held by a possessory entity associated with
3 the given candidate.
- 1 17. The method of Claim 14 wherein at least a portion of the priority of a given
2 candidate is established statically.

1 18. The method of Claim 17 wherein said portion is established based on the type of
2 the given candidate.

19. A computer-readable medium carrying instructions for selecting a victim to be used during resolution of a deadlock, the computer-readable medium comprising instructions for performing the steps of:

initially establishing a plurality of resources involved in said deadlock as a set of candidates to be said victim;

performing a first filtering pass that removes candidates from said set based on CAN-BE-VICTIM flags associated with said candidates;

if more than a single candidate remains in said set after said first filtering pass, then performing a second filtering pass that removes candidates from said set based on priorities associated with said candidates; and

if more than a single candidate remains in said set after said second filtering pass, then performing a third filtering pass that removes candidates from said set based on runtimes associated with possessory entities associated with said candidates; and

when said set has been filtered to include a single candidate, selecting said candidate as said victim.

1 20. The computer-readable medium of Claim 19 wherein at least a portion of the
2 priority of a given resource is established dynamically.

- 1 21. The computer-readable medium of Claim 20 wherein said portion is established
2 based on which other resources are held by a possessory entity associated with the
3 given resource.
- 1 22. The computer-readable medium of Claim 19 wherein at least a portion of the
2 priority of a given resource is established statically.
- 1 23. The computer-readable medium of Claim 22 wherein said portion is established
2 based on the type of the given resource.
- 1 24. A computer-readable medium carrying instructions for selecting a victim to be
2 used during resolution of a deadlock, the computer-readable medium carrying
3 instructions for performing the steps of:
4 initially establishing a plurality of candidates involved in said deadlock as
5 candidates to be said victim;
6 filtering said plurality of candidates based on one or more factors until a single
7 candidate remains as a candidate to be said victim; and
8 selecting said single candidate as the victim to be used during resolution of said
9 deadlock.
- 1 25. The computer-readable medium of Claim 24 wherein the step of filtering further
2 includes removing from said plurality of candidates any candidates that have a
3 CAN-BE-VICTIM flag that indicates the candidate cannot be a victim.

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1 26. The computer-readable medium of Claim 24 wherein the step of filtering further
2 includes removing from said plurality of candidates the candidates whose resource
3 priority is higher than the resource priority of at least one of the other candidates.

1 27. The computer-readable medium of Claim 24 wherein the step of filtering further
2 includes removing from said plurality of candidates all the candidates that are
3 associated with possessory entities have been running for a duration of time that is
4 relatively longer than the duration of time that possessory entities associated with
5 the other candidates have been running.

1 28. The computer-readable medium of Claim 24 wherein the step of filtering further
2 includes the computer implemented steps of:
3 removing some candidates from the plurality of candidates in a first pass based on
4 a first factor wherein the candidates left is a first subset of candidates; and
5 removing some candidates from the first subset of candidates in a second pass
6 based on a second factor that is different from the first factor.

1 29. The computer-readable medium of Claim 28 wherein the candidates left after said
2 second pass is a second subset of candidates and wherein the second pass based on
3 the second factor is only performed if after performing the first pass more than
4 one candidate is in the first subset of candidates.

1 30. The computer-readable medium of Claim 29 further comprising instructions for
2 the computer-implemented step of performing a third pass based on a third factor

only if after performing the first and the second pass more than one candidate is in the second subset of candidates wherein the third factor is different from the first factor and the second factor.

31. The computer-readable medium of Claim 24 wherein the step for filtering further comprises the computer-implemented steps of:

- performing a first pass to filter out any candidates that have a CAN-BE-VICTIM flag indicating that one is not candidate for termination;
- if more than one candidate is left after performing the first pass, then performing a second pass to filter any candidates whose resource priority is higher than the resource priority of at least one of the other candidates;
- if more than one candidate is left after performing the second pass, then performing a third pass to filter out all the candidates except the candidate that has been running for the shortest duration of time.

32. The computer-readable medium of Claim 24 wherein the step of filtering includes filtering based on priorities established for said candidates.

33. The computer-readable medium of Claim 32 wherein at least a portion of the priority of a given candidate is established dynamically.

34. The computer-readable medium of Claim 33 wherein said portion is established based on which resources other than said candidate are held by a possessory entity associated with the given candidate.

